

Serial No.: 10/087,989

Atty Docket No. 280/072CIP

This listing of claims will replace all prior version, and listing, of claims in the application.

Listing of Claims:

1. A method of vertically separating a thick wafer having a top surface and a bottom surface, the thick wafer being on a dice support, the method comprising:
 1. aligning a first dicing tool for a first dice with the thick wafer adjacent to the top surface;
 2. dicing the thick wafer to create a first dice;
 3. flipping the thick wafer so that the top surface is in contact with the dice support;
 4. aligning a second dicing tool for a second dice with the composite wafer adjacent to the bottom surface of the thick wafer; and
 5. dicing through the thick wafer.
2. The method of claim 1, wherein the first and second dicing tools are the same.
3. (currently amended) The method of claim 1, further comprising, after said dicing to create the first dice, bonding securing another wafer on top of the first dice.
4. The method of claim 3, further comprising, after dicing to create the first dice, aligning a third dicing tool for a third dice with the thick wafer adjacent to the another wafer and dicing to create a third dice.
5. The method of claim 4, wherein the third dice is created before the second dice.
6. The method of claim 4, wherein at least two of the first, second and third dicing tools are the same.
7. The method of claim 1, wherein the thick wafer includes a first wafer and a second wafer.

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8. The method of claim 7, wherein the thick wafer includes a first wafer and a second wafer have different thicknesses.
9. The method of claim 7, wherein the first wafer and the second wafer are of different materials.
10. The method of claim 7, wherein at least one of the first and second wafers is lithographically processed on a wafer level.
11. The method of claim 10, wherein at least one of the first and second wafers has a lithographically created optical element thereon.
12. (currently amended) The method of claim 4, further comprising, before said aligning of the first dicing tool, bonding securing the first and second wafers together.
13. (currently amended) The method of claim 12, wherein said bonding securing includes providing adhesive material between the first and second wafers.
14. (currently amended) The method of claim 12, wherein said bonding securing includes fusing the first and second wafers together.
15. (currently amended) The method of claim 12, further comprising, before said bonding securing, lithographically processing at least one of the first and second wafers.
16. The method of claim 15, wherein said lithographically processing includes creating an optical element.
17. The method of claim 1, wherein said aligning includes aligning the second dicing tool through the thick wafer to the first dice.

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18. The method of claim 1, wherein said aligning includes aligning the second dicing tool to alignment marks on the thick wafer.
19. The method of claim 18, further comprising, prior to said aligning of the first dicing tool, creating alignment marks on the top and bottom surfaces of the thick wafer.
20. (new) The method of claim 1, wherein said dicing through the thick wafer realized the vertical separating of the thick wafer.